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SUMMARY OF NATIONAL PAPER*

Indonesia's future development depends critically on its ability to optimize the utilization of its human and natural resources in a way that is in harmony with its environment and for the benefit and welfare of its people. In the development process appropriate science and technology has to be developed and applied. The existing science and technology resources have to be fully utilized, improved and co-ordinated in order to strengthen the science and technology base for development.

Five problem areas are presented as illustrative problems in the development and application of science and technology for national development, i.e.:

- food and agriculture;
- health, human settlement and environment;
- natural resources and energy;
- transportation and communications; and
- industrialization and human resources.

* The designations employed, the presentation of material and the views expressed in this paper are those of the Government of Indonesia and do not necessarily reflect the practices and views of the Secretariat of the United Nations in any of these respects.

International co-operation in science and technology could enhance the process of national development since through such co-operation there will be an exchange of information, knowledge and experience relevant to the development and application of science and technology needed for national development.

Specific recommendations are proposed on ways of improving international co-operation in the field of science and technology to ensure national development.

VI. Recommendations

There are five priority areas which must be considered when considering future progress in the field of development. These have been chosen as those which can most effectively answer the national development challenge and in which science and technology can play an important role.

These five areas are:

- The development of non-renewable and renewable natural resources;
- The fulfilment of basic needs; food, housing and clothing;
- The raising of the quality of life, health and education;
- The strengthening of the physical infrastructure; transportation and communications;
- The management of social dynamics, ecosystems, social structure and dynamics and industrialization.

In Indonesia, international co-operation in science and technology should be appropriate to the above-stated problem areas or it should strengthen and further develop the scientific and technological infrastructure.

The national development of Indonesia has to be based on self-reliance in three important areas: national resources, basic needs and technology.

Many recommendations have been made on the subject of international co-operation at various international and regional forums. The important issue is not the recommendations themselves but the willingness and responsibility of the Member States to fulfil their commitments. Hopefully, the UNCSTD results will be felt by all countries throughout the world and will help to create the "New Technological Order".

1. To strengthen the scientific and technological infrastructure.

Infrastructure is the foundation of development. Therefore a national development programme in science and technology should concentrate on the development of the nation's resources and should:

(a) encourage manpower development programmes at all levels, through formal and non-formal education, training and other suitable systems;

(b) improve the facilities for science and technology (institutions, equipment, etc.);

(c) increase the budget allocation for science and technology;

(d) strengthen the management system and the delivery system of science and technology.

The national development programmes should also be backed up by international co-operation in science and technology which should be directed towards the development of the nation's infrastructure and should:

(a) promote manpower development programmes at all levels through formal and non-formal education, training, exchange of experts and other suitable systems;

(b) strengthen the national documentation and information centres and establish a national information dissemination system;

(c) promote and strengthen extension services which are directly needed by the society, such as industrial extension services and agriculture extension services, etc.

2. To facilitate international and interregional co-operation in science and technology.

From past experience in the field of international co-operation it is evident that a more efficient system is necessary. Thus action should be taken:

(a) to overcome unnecessary bureaucracy;

(b) to give the developing countries more opportunity to take part in the management of international co-operation projects, from the design stage through to evaluation;

(c) to establish an international assessment system in science and technology based on broad criteria;

(d) to encourage the setting up of long-term international and interregional projects.

3. To facilitate regional and subregional co-operation among developing countries in science and technology.

Developing countries in the South-East Asian region have similar economic characteristics and are mostly rural and agro-based. Thus action should be taken:

(a) to encourage and to establish co-operation in science and technology especially concerning problems of common interest in the region: e.g. food and agriculture, post-harvest technology, fisheries, nutrition, health and environment;

(b) to encourage the non-governmental/private sector to share in regional and subregional co-operation in science and technology.

4. The Standing Committee of ASEAN, the Association of South-East Asia Nations, should promote more research and development projects in its member countries.

5. An international effort must be made to strengthen scientific and technological research and development institutions by sistership or other types of linkage to institutions with the same objectives or activities.

6. To encourage the transfer of technology.

This form of international co-operation could come from industrialized countries or international enterprises which have certain activities in the country concerned. In this way the transfer of technology may be more suited to the environmental conditions of the country concerned.

7. To develop the capability of the developing countries by exemption from or reduction in royalties and licensing fees when importing technologies from abroad.

8. To promote a national body for the transfer of technology which will formulate the pattern for co-operation and be responsible for programme planning and control and its subsequent implementation.

9. To promote and develop further the TCDC programme

(a) to encourage the industrialized countries to take part in sponsoring the programme;

(b) to develop a more appropriate communications system to support the TCDC programme in science and technology.

10. Action should be taken to separate technology from traditional foreign investment packages; that is, to remove restrictive business clauses in the agreements and distribute control over the use of technology. Developing countries should be given more chance to take part in the implementation of a technology when it is already in use in the country; for example the building-up of the site or plant.

11. To optimize the existing institutional system by establishing a network among the agencies both under United Nations sponsorship and in the industrialized countries and to make a co-ordinated effort to ensure that aid programmes are complementary to the development programmes of the countries involved.